

HOLISTIC NUTRITION FOR INDIA'S CHILDREN: EFFECTIVENESS AND FUTURE DIRECTIONS OF THE POSHAK AHAR PROGRAM

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ABSTRACT

Poshak Ahar—India's school-based nutrition initiatives linking the Mid-Day Meal (PM POSHAN) scheme with Poshan Abhiyaan/Mission Poshan 2.0—aim to reduce undernutrition and micronutrient deficiencies among school-age children while supporting attendance and learning. This study synthesizes secondary data from NFHS-4 (2015–16) and NFHS-5 (2019–21), government reports, and peer-reviewed evaluations to assess the effectiveness, reach, and limitations of Poshak Ahar programs. Findings show measurable gains in chronic undernutrition indicators: stunting and underweight prevalence among young children have declined in recent years, and evidence links sustained school feeding with improved height-for-age and weight-for-age outcomes, higher enrolment, and better classroom engagement. Nevertheless, persistent and growing challenges remain—most notably high anaemia prevalence, regional disparities in program quality and coverage, infrastructure deficits (kitchens, potable water), supply-chain and monitoring shortfalls, and pandemic-related interruptions. The analysis highlights that while school meals are a critical component of a multi-sectoral nutrition strategy, their impact on micronutrient status requires strengthened fortification, supplementation, and behaviour-change interventions. The paper concludes with policy recommendations to enhance Poshak Ahar impact: upgrade infrastructure, diversify and fortify menus (including millets and locally sourced foods), implement robust real-time monitoring and third-party audits, expand nutrition education, and prioritize high-burden regions with targeted support and contingency planning. Strengthening these elements can make Poshak Ahar a more resilient and equitable vehicle for improving child nutrition, health, and educational outcomes in India.

Keywords: Poshak Ahar, PM POSHAN, Child Malnutrition, School Feeding, Anaemia.

Introduction

Malnutrition among school-going children in India is a critical public health issue with far-reaching implications for the country's socio-economic development. Undernutrition and micronutrient deficiencies affect millions of children, impairing physical growth, cognitive development, and academic performance. India is home to one of the highest burdens of child malnutrition in the world – about one-third of the world's stunted children reside in India. As of the latest national surveys, 35.5% of Indian children under five are stunted, 32.1% are underweight, and 19.3% are wasted, reflecting gradual improvement but still-high levels of chronic undernutrition. Additionally, anaemia remains widespread; over two-thirds of young children are anaemic, signalling persistent micronutrient gaps. These statistics underscore the urgency for robust nutritional interventions targeting children.

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Recognizing this challenge, the Government of India has launched several initiatives to improve dietary intake and health outcomes for children. Two flagship programs are the Poshan Abhiyaan and the Mid-Day Meal scheme. The Poshan Abhiyaan, also known as the National Nutrition Mission, was introduced in 2018 with the aim of reducing stunting, underweight, and anaemia among children, adolescent girls, and women through a multi-sectoral approach. This mission brought together various schemes (for example, Integrated Child Development Services, Iron and Folic Acid supplementation, etc.) under a common umbrella to enable convergence and better monitoring. In 2021, the program was strengthened and subsumed into Mission Poshan 2.0, an integrated nutrition support initiative that merged Poshan Abhiyaan with the Anganwadi Services and Scheme for Adolescent Girls. Mission Poshan 2.0 operates in a lifecycle mode, focusing on maternal and child nutrition in the first 1,000 days and extending support to preschool and school-aged children.

The Mid-Day Meal (MDM) scheme, operational since 1995, provides free lunches to primary and upper-primary students in government and aided schools. It addresses classroom hunger and also serves as an incentive for school attendance and retention. In 2021, the scheme was revamped and renamed PM POSHAN (Pradhan Mantri Poshan Shakti Nirman), expanding its coverage to include pre-primary (Bal Vatika) children in addition to students in Classes 1–8. Today, India's school feeding program is one of the largest in the world, reaching about 120 million children daily. By alleviating short-term hunger, the Mid-Day Meal program aims to improve children's concentration in class, while its long-term goals are to improve nutritional status and encourage regular school attendance.

Within these broader initiatives, Poshak Ahar programs specifically focus on enhancing the nutrition of school-going children (generally 6–14 years old). “Poshak Ahar” (meaning *nutritious food* in Hindi) in this context refers to the provision of wholesome, balanced meals to children through the school system, often in convergence with the Mid-Day Meal scheme and nutrition education efforts. By providing freshly cooked lunches that meet defined calorie and protein standards, along with supplementation (e.g., iron and folic acid tablets under the Anaemia Mukta Bharat strategy), these programs aim to combat undernutrition and micronutrient deficiencies among children. There is evidence that such school-based nutrition programs have yielded improvements in child nutrition outcomes. For instance, regions with robust implementation of the Mid-Day Meal scheme have reported better trends in child growth indicators compared to the national average. School-based nutrition interventions not only directly improve dietary intake but also have indirect benefits by influencing parental awareness and healthcare-seeking. However, despite these positive strides, significant challenges remain in achieving universal coverage and consistent quality of program delivery. Issues such as regional disparities, infrastructural limitations, variability in meal quality, and program implementation gaps continue to impede progress.

This paper examines the current effectiveness of Poshak Ahar programs in India, nutritional status and related outcomes among school-going children. It also reviews the evolving policy landscape (including Poshan Abhiyaan/Mission Poshan 2.0 and PM Poshan mid-day meals) and recent evaluations by national and international agencies. By identifying key achievements and persistent challenges, the study aims to provide insights for policymakers and stakeholders to further strengthen nutritional interventions for children.

Objectives

- To assess the nutritional impact of Poshak Ahar programs on children's health outcomes, as measured by indicators like stunting, wasting, underweight, and anaemia.
- To identify key challenges in implementing Poshak Ahar programs across diverse school environments in India.
- To evaluate the role of nutrition education and related initiatives in improving dietary habits and academic performance among students.

Methodology

This study utilizes secondary data and literature, integrating insights from NFHS-5 (2019–21), NFHS-4 (2015–16), and reports by the Ministries of Women & Child Development and Education. It analyses key nutrition indicators, including stunting, wasting, underweight, and anaemia, alongside school attendance and retention metrics. Supplementary data from ICMR, WHO, and UNICEF deepen the evaluation. Program-specific information on Poshan Abhiyaan and Mid-Day Meal schemes is drawn

from government releases. Peer-reviewed studies and statistical comparisons, such as meta-analyses, underscore significant trends in child nutrition and education outcomes. The study contextualizes these improvements within broader program implementation, emphasizing multi-faceted factors influencing progress in nutrition and health equity among children.

Improvements in Nutritional Status of Children

Overall, India has witnessed gradual improvements in child nutrition indicators in recent years, coinciding with the implementation of Poshan Abhiyaan and expansions of the mid-day meal program. According to NFHS-5 (2019–21) findings, stunting among children under five years of age declined to 35.5%, from 38.4% in 2015–16. Similarly, the prevalence of underweight children under five dropped to 32.1% (from 35.8% in 2015–16). These trends suggest positive momentum toward reducing chronic undernutrition. While national surveys focus on under-fives, it is expected that school-aged children (5–14 years) have benefited from the same nutrition interventions and supportive programs. In fact, an analysis by the Ministry of Women and Child Development noted significant gains in areas where school nutrition programs are strongly implemented, with underweight prevalence among school-age children declining by roughly 3–4 percentage points over five. Wasting (acute malnutrition) showed a modest improvement nationally (from 21.0% to 19.3%), though it remains above acceptable levels, indicating the need for continued efforts in illness prevention and dietary support.

Crucially, Poshak Ahar (school nutrition) programs have contributed to improvements in height and weight outcomes among participating children. Regular provision of balanced meals at school has been linked with better growth trajectories, especially for children from food-insecure households. For instance, a systematic review by Raveenthiranathan et al. (2023) found that children with access to the Mid-Day Meal Scheme (MDMS) over several years showed marginally higher gains in height-for-age and weight-for-age compared to those without access, although results on nutritional status were mixed across studies. In some program intervention areas, stunting among school-aged children has been reported to decline faster than the national average, attributed to the daily nutrient intake from school meals. These findings underscore that while school feeding alone may not completely eradicate stunting or underweight, it is a vital component of the multi-pronged strategy needed to tackle child malnutrition.

However, not all nutrition outcomes have improved uniformly. One area of concern is childhood anaemia. Despite the efforts under Poshan Abhiyaan and the Anaemia Mukh Bharat initiative (which distributes iron supplements and promotes iron-rich diets), anaemia rates among children have actually increased in recent years at the national level. The NFHS-5 survey revealed that 67.1% of children aged 6–59 months are anaemic, up from 58.6% in 2015–16. This indicates that micronutrient malnutrition remains a stubborn challenge. It is possible that in select locales where Poshak Ahar programs include fortified foods and deworming, anaemia reductions have been observed (the original program data suggested a decline to 53% in some regions). But overall, the high anaemia prevalence calls for intensifying interventions like iron and folic acid supplementation, dietary diversification, and health education. The government's response, through Anaemia Mukh Bharat (launched 2018) and now part of Poshan 2.0, has been to ensure biannual deworming and weekly iron-folic acid tablets for school children, as well as fortification of staples.

For example, fortified rice (with iron, vitamin B12, folic acid) is being provided in mid-day meals and Anganwadi meals to combat. While these measures are in place, their full impact on anaemia statistics might become evident in coming years. Meanwhile, the persistence of anaemia highlights that dietary quality (especially micronutrient content) is as important as quantity.

Another noteworthy development is in school participation and attendance, which are indirect indicators of the success of nutritional and educational support programs. School attendance in the primary years (ages 6–14) is now almost universal in India – about 95–97% of children in this age group attend school. Multiple studies credit the Mid-Day Meal scheme as one factor that has improved enrolment and retention of children, particularly from economically disadvantaged families. By providing a reliable meal each day, the program acts as a safety net that encourages parents to send children to school and keeps children in class during the day. Research evidence confirms this effect: a 2024 systematic review of the MDMS found that regular access to mid-day meals significantly improves enrolment, attendance, and retention rates, and is associated with lower dropout rates. Some states have reported tangible gains; for instance, ministry data show that in communities where the Poshak Ahar (MDM) program was intensified, school attendance rose by ~10% and dropout rates fell, compared to

areas without such support. Moreover, teachers often observe better concentration and participation in class after the lunch break, indicating that addressing hunger has an immediate positive impact on learning capacity.

Table 1: Key Nutrition & Program Indicators (NFHS-4 Vs NFHS-5)

Indicator	NFHS-4 (2015–16)	NFHS-5 (2019–21)	Change (absolute)	Note / relevance
Stunting (children <5 yrs)	38.4%	35.5%	–2.9 pp	Chronic undernutrition trend
Underweight (children <5 yrs)	35.8%	32.1%	–3.7 pp	Reflects weight-for-age gains
Wasting (children <5 yrs)	21.0%	19.3%	–1.7 pp	Acute malnutrition (smaller change)
Anaemia (children 6–59 months)	58.6%	67.1%	+8.5 pp	Micronutrient gap — concern
School attendance (ages 6–14)	—	95–97%	—	Near-universal primary attendance
Children reached by MDM / PM POSHAN (approx.)	—	~120 million/day	—	Program reach (coverage)

Sources: NFHS-4, NFHS-5, Government program reports.

Health and Cognitive Benefits

Improved nutrition through school programs has translated into better health and cognitive outcomes for children. Adequate and balanced diets help strengthen children's immune systems, which can reduce their vulnerability to common illnesses. It is reported that schools participating in Poshan Ahar have seen a decline in frequent ailments among students. For example, one study by ICMR noted that the incidence of respiratory infections and gastrointestinal illnesses was lower (by approximately 15–20%) among children receiving regular mid-day meals, compared to previous levels in those communities. While such specific estimates need further corroboration, the general trend is that well-nourished children are healthier and miss fewer school days due to sickness. This contributes to a virtuous cycle — healthier children attend school more regularly and continue to benefit from the educational and nutritional inputs.

Cognitive development and academic performance are also positively influenced by nutrition. Chronic undernutrition and iron-deficiency anaemia are known to impair cognitive abilities like attention, memory, and problem-solving in children. By mitigating these deficiencies, Poshak Ahar programs help improve students' ability to learn. Schools with robust nutrition programs have reported improvements in test scores and class engagement. In particular, nutrition education components of Poshan Abhiyaan (such as educating children about healthy eating and hygiene) have increased children's nutritional knowledge and even led to healthier behaviours.

For instance, a recent study found that students who received focused nutrition education as part of the program increased their consumption of fruits and vegetables and were 20% less likely to consume junk foods. Over time, such behavioural changes contribute to better health and academic readiness. Additionally, there is emerging evidence of intergenerational benefits of India's school feeding programs: girls who benefited from school meals in their childhood grow into healthier mothers, and consequently their own children have improved growth outcomes (e.g., lower stunting). This underlines the long-term payoff of investing in child nutrition programs.

The Poshak Ahar initiatives — through a combination of mid-day meals, nutrition supplementation, and education — have made significant strides in improving the nutritional status, health, and education outcomes of school-going children in India. Key gains include reductions in undernutrition indices, maintenance of high school attendance even in disadvantaged areas, and enhanced awareness of nutrition and health practices. These successes provide a strong foundation upon which to build further improvements. However, the benefits have not reached all children equally, and some critical challenges need to be addressed to achieve the program's full potential.

Challenges in Scaling the Poshak Ahar Program in India

Implementing the Poshak Ahar program at scale faces significant obstacles that need systematic resolution to ensure equitable nutritional benefits for all school children:

- **Infrastructure and Resource Constraints:** Many schools lack proper kitchens, clean water, and sufficient resources for quality meal preparation. Nearly 30–40% of schools operate without functional kitchen sheds, and one-third in rural areas lack potable water, leading to hygiene and food safety concerns. Irregular supply chains exacerbate the issue, compromising meal quality and availability.
- **Socio-Economic Disparities:** The program's impact varies with regional inequalities. In impoverished areas, mid-day meals are a crucial lifeline for over half of children's daily calorie intake. Disruptions, like school holidays or funding delays, widen the nutrition gap, disproportionately affecting disadvantaged communities. Poor regions often lack community support, increasing reliance on government resources.
- **Logistical and Supply Chain Issues:** Managing food supplies for millions daily is challenging. Delayed deliveries, spoilage, and inconsistent supply often reduce menu variety and nutritional quality. Remote regions suffer transportation delays, while cold-chain maintenance for perishables remains unfeasible. Decentralized supply chains, involving self-help groups and local farmers, need broader implementation to ensure consistent delivery.
- **Monitoring and Quality Control:** Monitoring millions of schools for meal quality, hygiene, and nutrition content is daunting. Current mechanisms, reliant on infrequent official visits, fail to prevent issues like sub-standard meals or inadequate portions. Effective oversight through mobile app reporting, parent-teacher committees, and independent audits is essential for maintaining standards.
- **Cultural and Dietary Diversity:** India's regional dietary habits challenge the creation of standardized meal plans. Menus must balance national nutritional guidelines with local preferences to ensure acceptance. Practices like "Tithi Bhojan" encourage local contributions, but cooks need training in diverse, culturally suitable recipes using locally available ingredients.
- **Pandemic Disruptions:** COVID-19 severely disrupted the program. School closures deprived children of mid-day meals, and substitute measures like rations or cash transfers proved inadequate for many. Post-pandemic recovery faces hurdles like reactivating supply chains and addressing nutrition deficits, highlighting the need for resilient mechanisms to support children during emergencies.

Addressing these multifaceted challenges requires investments in infrastructure, tailored regional strategies, robust logistics, effective monitoring, and resilient systems to enhance the program's reach and impact.

Table 2: Major Implementation Challenges and Recommended Actions

Challenge	Impact / Evidence (from text)	Recommended action
Infrastructure & resources (kitchens, water)	30–40% schools lack kitchen sheds; hygiene/food-safety risk	Fund kitchen sheds, potable water; PPPs for upgrades
Regional / socio-economic disparities	Poorer regions rely heavily on MDM; variable outcomes	Prioritise high-burden districts with extra inputs
Supply-chain & logistics	Delays, spoilage, limited menu variety	Decentralise procurement (local farmers/SHGs), strengthen cold-chain where feasible
Monitoring & quality control	Infrequent inspections, inconsistent meal quality	Real-time app reporting, third-party audits, SMC involvement
Micronutrient deficiencies (anaemia)	Anaemia increased nationally; fortification gaps	Fortify staples, scale IFA, deworming, behaviour-change communication
Pandemic / emergency vulnerability	School closures disrupt feeding; rations inadequate	Contingency protocols (take-home rations, cash + monitoring)

Source: <https://poshanabhiyaan.gov.in/>

Recommendations for Strengthening Poshak Ahar Programs

To enhance nutritional interventions for school children under the Poshak Ahar program, several key recommendations can be implemented:

- **Strengthen Infrastructure and Funding:** Build or upgrade kitchens and ensure safe cooking spaces, fuel, and clean water in schools. Expedite government schemes for full infrastructure coverage, adjust budgets to inflation rates, and explore Public-Private Partnerships for funding.
- **Enhance Meal Quality and Diversity:** Universalize fortified staples, incorporate locally sourced nutrient-rich foods like millets and vegetables, and ensure variety in menus. Regular nutritionist reviews and introducing breakfast/snacks in high-undernutrition regions can improve outcomes.
- **Robust Monitoring Mechanism:** Utilize technology like mobile apps for real-time meal reporting and dashboards for officials. Conduct annual audits, engage School Management Committees, and introduce third-party evaluations focusing on health metrics like BMI and haemoglobin levels.
- **Community Engagement:** Promote community involvement through governance bodies, local innovations like kitchen gardens, and awareness campaigns for parents and teachers. Encourage initiatives like "Poshan Bhi Padhai Bhi" to integrate nutrition as a societal priority.
- **Integrate Nutrition Education:** Teach children about balanced diets and healthy habits in curricula through activities like cooking demos and garden projects. Equip students to spread knowledge, improving household practices and complementing school meals.
- **Address Regional Disparities:** Prioritize high-burden areas with additional supplements and strict monitoring. Pilot new ideas in better-performing regions and facilitate best practice sharing. Develop contingency protocols for emergencies like school closures to ensure uninterrupted nutrition support.

Implementing these strategies will enhance meal quality, coverage, and nutritional impact, helping children grow, learn, and thrive while supporting India's malnutrition reduction goals.

Conclusion

The Poshak Ahar program, integrated with Poshan Abhiyaan and PM POSHAN, has emerged as a cornerstone in India's fight against child malnutrition. Evidence demonstrates improvements in reducing stunting, underweight, and enhancing school attendance, highlighting its positive influence on both health and education. However, persistent challenges such as high anaemia prevalence, infrastructural gaps, regional disparities, and disruptions during crises like COVID-19 underline the program's limitations. Strengthening kitchen and supply infrastructure, ensuring dietary diversity through fortified and locally sourced foods, and embedding nutrition education are crucial for sustaining progress. Equally important are robust monitoring mechanisms and active community participation to ensure equitable benefits across regions. By addressing these challenges with targeted policy interventions, India can move toward a more resilient, inclusive, and holistic nutrition framework, securing healthier futures for its children.

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